REMARKS

Reconsideration of the application in view of the above amendments and the following remarks is respectfully requested.

Claims 1-21 are pending in this application. Claims 1-21 have been rejected under 37 C.F.R 103(c). Claim 1 has been amended. Claims 29 has been added.

Examiner has objected to claim 2. Claim 1 claims a novel and useful part of a working apparatus. The outer casing of the completed apparatus is claimed by inference only. Since the outer casing necessary for the operation of the present invention is a one time purchase, and the inner casing is a replaceable part, an infringer could make a one time purchase of the assembly, and buy replacement parts from another supplier. Thus, the two claims are different, and necessarily different, to precisely define and protect the invention.

Applicant requests that Examiner review this case, starting from first principles. For a physicist, a good starting point is to consider the energy. In the art of Jet Milling, energy is put into the system in the form of a high pressure fluid. The energy is transported from place to place by the fluid flowing. One of skill in the art recognizes that the appropriate energy function in such cases is the enthalpy of the fluid, and that the energy is generally divided into potential and kinetic energy parts. If the velocity of the fluid flow is low, the pressure is high and the energy is mostly potential energy. If the velocity is high, the pressure is low, and the energy is mostly in the form of kinetic energy. To transform the energy from potential to kinetic energy of motion, the prior art knows that a nozzle is necessary. On one side of the nozzle, the pressure is high. On the other side, the pressure is low, and the fluid exits the nozzle as a high speed jet. One of skill in the art recognizes that the cross sectional area of the duct leading to the nozzle must be great enough so that the pressure does not drop too much as the fluid is brought to the nozzle (ie the fluid must flow slowly). In the particular case of a jet mill, generally a plurality of nozzles is used to introduce the energy into the working volume of the jet mill, and the pressure on the upstream side of each nozzle should be the same to ensure reproducible results. Once the fluid jet is introduced into the working volume, the particles are entrained, hit other particles and the walls, and the

stored potential energy, converted to kinetic energy, is used to break apart the particles in the chamber. Note that the velocity of the fluid does not necessarily raise the pressure inside the chamber unless the fluid is "stopped". The circulating gas flow retains the energy until the energy is deposited in the dust particles. The pressure in the chamber needs only to be high enough to support the flow of fluid and "dust" out via a large cross-sectional area port to the rest of the system where the dust and fluid are separated.

In the prior art system, then, the exterior and interior of the milling chamber are at nearly the same low pressure. The casing of the prior art system does not need to be and is not "pressure resistant" . No prior art system known to Applicant is described as "pressure resistant".

In the prior art system cited by examiner, the pressure on the outside of the "body casing 6" of Goto is not described, but is probably atmospheric pressure. There is no mention or suggestion that the "body casing 6" or the top and bottom plates of Fig. 1 (not named or numbered) are pressure resistant, either before assembly or after.

The "ring liner 7", the "top liner 9" and the "bottom liner 10" of Goto do not form a "casement". Goto explicitly calls one part of his system a casement, and could have equally called the combination of "liners" a "casement", but did not do so. This is because the liners are a collection of parts, and have no independent existence aside from being placed inside of and supported by the "casement" cited by Goto. Parts 11 and 12 are explicitly cited as "detachably disposed" Since the pressure is exactly the same on both all sides of parts 7,9, and 10, there is no need and it is certainly not mentioned or suggested that such parts, or the combination of the parts together, be "pressure resistant". Examiner states that is a part of the "inner casement". Applicant respectfully disagrees that nozzle 3 is part of the inner casement.

Examiner has stated that there is a pressurized volume between an outer surface the inner casing and an inner surface of the outer casing. There is no such volume between parts 7,9,and 10 and the casing 6 of Goto. Examiner states in the interview of April 3, 2006, that the volume of space occupied at the arrowhead of the line 15a in fig. 1 of Goto is a pressurized fluid filled volume. Examiner Pahng states

that the pressurized fluid filled volume is in contact with an inner surface of the outer casing. Applicant agrees that element 6 of Goto is part of the outer casing which is formed by part 6 and the unnamed elements shown touching the cylindrical part 6 . Applicant respectfully disagrees that the section pointed to by the examiner shows an "inside surface" of the casement.

Applicant states that "casement" encases something inside it. Surely, in the art, a casement has an inside and an outside. The casement of Goto encases parts 7, 9, and 10. Parts 7, 9 and 10 are assembled, then parts 6 and the two unnamed parts of the "outer casing" of Goto is assembled around them. Parts 7, 9 and 10 are encased., and are surely inside the casement. After the casement is assembled with the parts 7, 9 and 10 inside, jets 3 are inserted *from the outside of the casing part 6.* Examiner calls jets 3 part of the inner casing. How can this be, when the jets 6 are inserted after the casing is assembled? If the inner casement is an object to be enclosed in the outer casement, how can Examiner describe something as part of the inner casement when it can be attached only after the parts are already encased?

Examiner has stated in the interview of April 3, 2006 that the volume around the arrowhead of line 15 contains a high pressure fluid. Applicant states that a pipe normally brings a high pressure fluid to that space, and that one of skill in the art would put a gasket between the nozzle 3 and the pipe fitting to prevent fluid leaking between the outer walls of jet 3 and the walls of the hole in the outer casing 6. The walls of the hole in part 6 drilled to accommodate the insertion of nozzle 3 would therefore not be under high pressure. Unless the pipe fitting (which is not shown in Goto) is also considered part of the outer casing, no part of casement part 6 in Goto would be under high pressure.

As explained above, the pressure on the left hand side of nozzle 3 is high. The pressure on the right hand side of nozzle 3 is low. Certainly, as described above, part 7 of Goto does not have to resist any high pressure.

The inner casing of the present invention, however, must resist a high pressure of fluid contained in the duct between the inner and outer casing. The invention moves the plenum chamber closer to the nozzle, which is now a hole drilled in the inner

casing. Fluid is carried at low velocity and high pressure into this duct. The cross sectional area of the duct flow should be high enough that little pressure drop occurs during the fluid transit from an inlet port in the outer casing and the jets. The claims have been amended to include a limitation on the volume of the duct. This limitation is "the pressurized duct has a significant volume compared to the inside volume of the inner casing", and the amendment is supported by the drawings. The "significant volume" will be understood by one of skill in the art as sufficient to allow adequate fluid flow with acceptable pressure drop, just as is required for the plenums of the prior art such as part 15 of Goto. The "high" and "low" pressures will be understood by one of skill in the art of jet mills to be the plenum pressure as known in the art and atmospheric and slightly above atmospheric pressures as known in the art of jet mills.

The outer casing of the present invention must be significantly stronger and more expensive than casings of the prior art because it must resist a much higher pressure differential between the inside of the casing and the outside of the casing. The parts of the inner casing must be much more carefully machined to resist the pressure and resist fluid flow between the parts of the inner casing (which would cause a loss of efficiency and perturb the fluid flow in the crushing chamber. The gain of the present invention is that the inner chamber can be "swapped out" quickly when the material is abraded, and the jet mill placed back on line much more quickly. The fluid transport lines to the outer casing do not have to be removed. In the prior art devices, the fluid lines connecting the nozzles to the plenum chamber must be disconnected, the nozzles removed, the liner plates changed, and the process reversed.

Claims 1-21 are pending in this application. Claim 1 has been amended. New Claim 29 is identical to previously canceled claim 27. Since none of the art cited shows or suggests:

"a pressure resistant pulverizing inner casing" ; nor

"the inner casing for being completely contained inside a pressure resistant outer casing, wherein the outer casing is resistant to a pressure difference between the high first pressure inside the outer casing and a low third pressure outside the outer casing"; nor

"and wherein the inner casing is resistant to a pressure difference between the high first pressure outside the inner casing and the low second pressure inside the inner casing"; nor

"and wherein a pressurized is duct formed between the inside walls of the outer casing and the outside walls of the inner casing, and wherein the pressurized duct has a significant volume compared to the inside volume of the inner casing, and wherein the pressurized duct is filled with propellant fluid having the first high pressure";

claim 1 (as amended) is allowable on 35 U.S.C. 102 and 103 grounds. Claims dependent on claim 1 are likewise allowable. Claims 2-21 and 29 are separately inventive over their parent claims, and are also allowable on grounds of novelty.

Applicant is unsure whether an additional fee is required. If so, the required fee will be from Feb. 2, 2006, until April 3, 2006, which falls on a Monday. Therefore, if necessary, a two month extension of time is required. Applicant has submitted an amendment on 2/2/06, but has misplaced the fax receipt. The required fees and any insufficiency or overage (except issue fees) may be debited or credited to deposit account 08/2240. A signed deposit account authorization is on file for this case.

On the basis of the above amendments and remarks, reconsideration of this application and its early allowance is respectfully requested.

CERTIFICATE OF FACSIMILE TRANSMISSION UNDER 37 CFR 1.8(a) and (b), 37CFR 1.86(f)-

I hereby certify that the following attached correspondence comprising Response and Amendment, is being sent by facsimile transmission to FAX NUMBER 571-273-1800 on April 3, 2006.

Respectfully,

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